

**Meeting of the Central Valley Flood Protection Board  
July 23, 2010  
Staff Report – Encroachment Permit  
City of Turlock  
Harding Drain Bypass Outfall Structure, Stanislaus County**

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**1.0 – ITEM**

Consider approval of Permit No. 18385 (Attachment B)

**2.0 – APPLICANT**

City of Turlock, Department of Public Works

**3.0 – LOCATION**

The project is located in Turlock, south and west of the intersection of Harding and Carpenter Roads.  
(San Joaquin River, Stanislaus County, see Attachment C)

**4.0 – DESCRIPTION**

To construct an outfall structure, approximately 75 feet long, and place riprap on the right (east) bank; install (trench) a 48-inch-diameter reinforced concrete pipe (RCP) under the right (east) bank levee of the San Joaquin River.

**5.0 – PROJECT ANALYSIS**

The applicant is proposing to construct an outfall structure under the right bank levee of the San Joaquin River. The outfall will be a submerged structure parallel to the flow of the river. The 48-inch diameter, 138-foot long RCP under the levee is a gravity flow section and will be encased in concrete. Rip-rap rock protection and gabions will be used in the river channel to prevent erosion.

## **5.1 – Hydraulic Analysis**

MBK Engineers performed a hydraulic analysis to determine potential hydraulic impacts from the Harding Drain Bypass outfall structure. The hydraulic analysis was performed using Hec-Ras, a one dimensional hydraulic modeling program developed by the U.S. Army Corps of Engineers. Flows for the 100-year event and the Corps' 1955 design flow for this section of the San Joaquin River were evaluated for existing conditions and project conditions. Results for both the 100-year event and the 1955 design flow indicate there is no measurable change in the maximum water surface elevation upstream or downstream of the proposed project.

## **5.2 – Geotechnical Analysis**

The proposed project has no significant geotechnical impacts.

## **5.3 – Additional Staff Analysis**

The purpose of the Harding Drain Bypass Project is to provide for the discharge of treated wastewater from the City of Turlock's regional wastewater treatment plant. Treated water is currently conveyed by the Harding Drain, a constructed agricultural drainage system. The new conveyance system will consist of approximately 5.6 miles of pipeline ending with the outfall structure as the San Joaquin River.

## **6.0 – AGENCY COMMENTS AND ENDORSEMENTS**

The comments and endorsements associated with this project, from all pertinent agencies are shown below:

- The U.S. Army Corps of Engineers 208.10 comment letter has not yet been received for this application. Upon receipt of a favorable letter and review by Board staff it will be incorporated into the permit as Exhibit A.
- Reclamation District No. 2063 has endorsed this application without conditions.

## **7.0 – PROPOSED CEQA FINDINGS**

Board staff has prepared CEQA findings (see Attachment D) for this project. Board staff finds that although the proposed project could have a potentially significant effect on the

environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent.

## **8.0 – SECTION 8610.5 CONSIDERATIONS**

1. Evidence that the Board admits into its record from any party, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department or other parties that raise credible scientific issues.

The accepted industry standards for the work proposed under this permit as regulated by Title 23 have been applied to the review of this permit.

3. Effects of the decision on the entire State Plan of Flood Control:

Hydraulic impacts from the proposed project have been shown to be neutral therefore the proposed project will have no negative impacts on the State Plan of Flood Control.

4. Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

Climate change issues have not been taken into account in the hydraulic analysis for this project; however, it is assumed to be inland past the point tidal influence raises in WSE. In addition the outfall structure will be a submerged structure so there should be no effects from reasonable projected future events that would impact the proposed project.

## **9.0 – STAFF RECOMMENDATION**

Staff recommends that the Board adopt the CEQA findings, approve the permit conditioned upon receipt of a favorable U.S. Army Corps of Engineers comment letter, and direct staff to file a Notice of Determination with the State Clearinghouse.

## **10.0 – LIST OF ATTACHMENTS**

- A. Resolution (not applicable)
- B. Draft Permit
- C. Location Maps and Photos
- D. CEQA Findings

**DRAFT**

STATE OF CALIFORNIA  
THE RESOURCES AGENCY  
**THE CENTRAL VALLEY FLOOD PROTECTION BOARD**

**PERMIT NO. 18385 BD**

**This Permit is issued to:**

City of Turlock, Department of Public Works  
156 S Broadway, Suite 270  
Turlock, California 95380

To construct an outfall structure, approximately 75 feet long, and place riprap on the right (east) bank; install (trench) a 48-inch-diameter reinforced concrete pipe under the right (east) bank levee of the San Joaquin River. The project is located in Turlock, south and west of the intersection of Harding and Carpenter Roads (Section 36, T5S, R8E, MDB&M, Reclamation District 2063, San Joaquin River, Stanislaus County).

**NOTE:** Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

**(SEAL)**

Dated: \_\_\_\_\_

\_\_\_\_\_  
Executive Officer

**GENERAL CONDITIONS:**

**ONE:** This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

**TWO:** Only work described in the subject application is authorized hereby.

**THREE:** This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

**FOUR:** The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

**FIVE:** Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection Board.

**SIX:** This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

**SEVEN:** It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

**EIGHT:** This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

**NINE:** The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

**TEN:** The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

**ELEVEN:** The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

**TWELVE:** Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

#### **SPECIAL CONDITIONS FOR PERMIT NO. 18385 BD**

**THIRTEEN:** All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Central Valley Flood Protection Board.

**FOURTEEN:** The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend and hold harmless the State of California, or any departments thereof, from any liability or claims of liability associated therewith.

**FIFTEEN:** The permittee shall be responsible for repair of any damages to the project levee and other flood control facilities due to construction, operation, or maintenance of the proposed project.

**SIXTEEN:** The Central Valley Flood Protection Board, Department of Water Resources, and Reclamation District No. 2063 shall not be held liable for damages to the permitted encroachment(s) resulting from releases of water from reservoirs, flood fight, operation, maintenance, inspection, or emergency repair.

**SEVENTEEN:** The permittee should contact the U.S. Army Corps of Engineers, Sacramento District, Regulatory Branch, 1325 J Street, Sacramento, California 95814, telephone (916) 557-5250, as compliance with Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act may be required.

**EIGHTEEN:** The permittee shall contact the Department of Water Resources by telephone, (916) 574-0609, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 10 working days prior to start of work may result in delay of the project.

**NINETEEN:** The permittee shall provide supervision and inspection services acceptable to the

Central Valley Flood Protection Board. A professional engineer registered in the State of California shall certify that all work was inspected and performed in accordance with submitted drawings, specifications, and permit conditions.

TWENTY: During construction of the project, any and all anticipated or unanticipated conditions encountered which may impact levee integrity or flood control shall be brought to the attention of the Flood Project Inspector immediately and prior to continuation.

TWENTY-ONE: A temporary bench mark, set to a known datum, shall be placed at the project site during construction.

TWENTY-TWO: Prior to construction the permittee shall install an X, Y, Z axis based coordinate monitoring system to monitor the levee before, during and after all sheet pile driving activities.

TWENTY-THREE: No material stockpiles, temporary buildings, or equipment shall remain in the floodway during the flood season from November 1st to July 15th.

TWENTY-FOUR: Cleared trees and brush shall be completely burned or removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1st to July 15th.

TWENTY-FIVE: No excavation shall be made or remain in the levee section during the flood season from November 1st to July 15th without prior written approval from the Central Valley Flood Protection Board.

TWENTY-SIX: Excavations made in the levee section or within 10 feet of the levee toes shall be backfilled in 4- to 6-inch layers with impervious material with 20 percent or more passing the No. 200 sieve, a plasticity index of 8 or more, and a liquid limit of less than 50 and free of lumps or stones exceeding 3 inches in greatest dimension, vegetative matter, or other unsatisfactory material. Backfill material shall be compacted in 4- to 6-inch layers to a minimum of 90 percent relative compaction as measured by ASTM Method D1557-91.

TWENTY-SEVEN: Compaction tests by a certified soils laboratory will be required to verify compaction of backfill within the levee section or within 10 feet of the levee toe.

TWENTY-EIGHT: Excavations below the design flood plane and within the levee section or within 10 feet of the projected waterward and landward levee slopes shall have side slopes no steeper than 1 horizontal to 1 vertical. Flatter slopes may be required to ensure stability of the excavation.

TWENTY-NINE: Pipe installed below the levee section and within 10 feet of the projected levee toes shall be precast reinforced concrete pipe (RCP) that meets ASTM Specification C76-90, or equivalent.

THIRTY: The RCP within the levee section shall not be less than 6 inches thick.

THIRTY-ONE: The 48-inch diameter RCP shall be installed through the levee section at a right angle to the centerline of the levee.

THIRTY-TWO: The precast RCP shall be encased below the springline in concrete cast against undisturbed earth.

THIRTY-THREE: The discharge pipe shall be placed in the center of an open trench 2 feet wider than the diameter of the pipe or 2 times the diameter, whichever is greater.

THIRTY-FOUR: Precast RCP joints shall be secured with hoop steel and encased in reinforced concrete.

THIRTY-FIVE: A positive-closure device that is readily accessible during periods of high water shall be installed on the waterward side of the levee.

THIRTY-SIX: The pipeline shall be tested and confirmed free of leaks by X-ray, pressure tests, or other approved methods during construction or anytime after construction upon request by the Central Valley Flood Protection Board.

THIRTY-SEVEN: The levee crown shall be surfaced with a minimum of 4 inches of compacted, Class 2, aggregate base (Caltrans Specification 26-1.02A).

THIRTY-EIGHT: In the event existing rock revetment on the levee section is disturbed or displaced during construction, it shall be restored to its preconstruction condition.

THIRTY-NINE: Revetment shall be uniformly placed and properly transitioned into the bank, levee slope, or adjacent revetment and in a manner which avoids segregation.

FORTY: The recommended minimum thickness of revetment, measured perpendicular to the bank or levee slope, is 18 inches below the usual water surface and 12 inches above the usual surface.

FORTY-ONE: Revetment shall be quarry stone and shall meet the following grading:

Quarry Stone

Stone Size	Percent Passing
15 inches;	100
8 inches;	80-95
6 inches;	45-80
4 inches;	15-45
2 inches;	0-15

FORTY-TWO: The project area shall be restored to at least the condition that existed prior to commencement of work.

FORTY-THREE: The permittee is responsible for repairing any damage to the levees caused by the installation or operation of the project.

FORTY-FOUR: The permittee shall maintain the permitted encroachment(s) and the project works



within the utilized area in the manner required and as requested by the authorized representative of the Department of Water Resources or any other agency responsible for maintenance.

FORTY-FIVE: The permitted encroachment(s) shall not interfere with operation and maintenance of the flood control project. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at permittee's cost and expense, to modify or remove the permitted encroachment(s) under direction of the Central Valley Flood Protection Board or Department of Water Resources. If the permittee does not comply, the Central Valley Flood Protection Board may modify or remove the encroachment(s) at the permittee's expense.

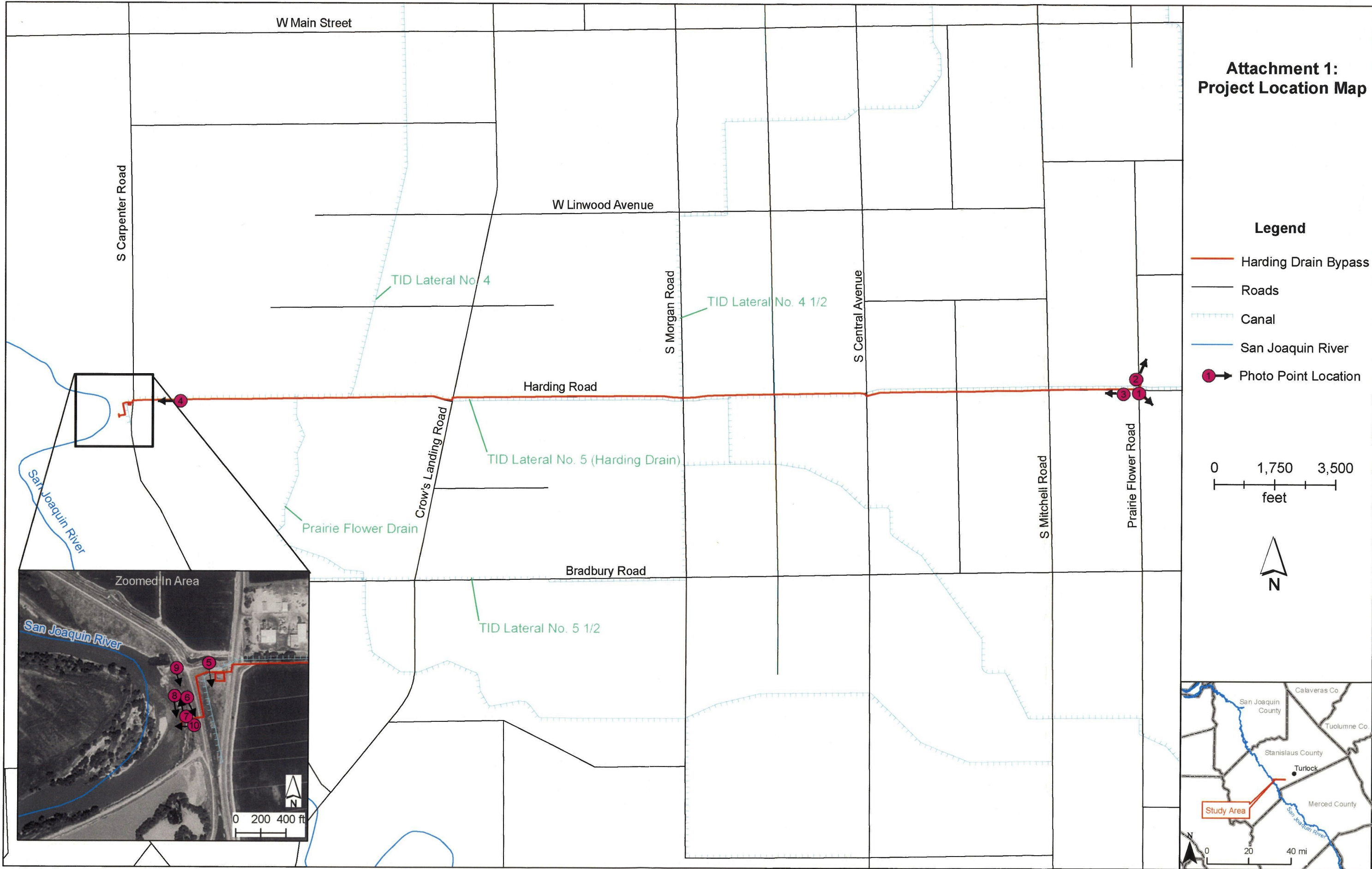
FORTY-SIX: If the outfall structure results in an adverse hydraulic impact, the permittee shall provide appropriate mitigation measures, to be approved by the Central Valley Flood Protection Board, prior to implementation of mitigation measures.

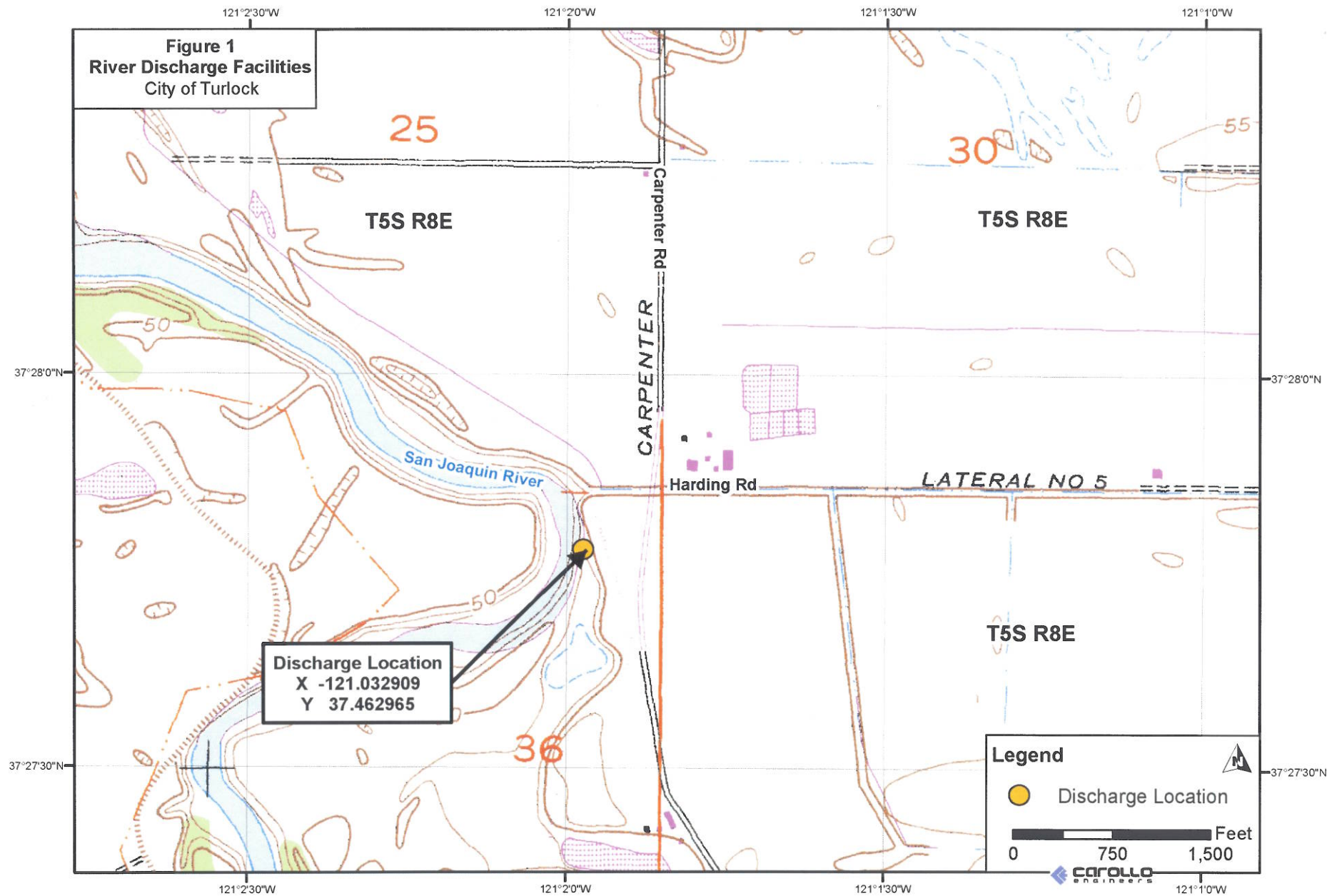
FORTY-SEVEN: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if damaged by any cause. If the permittee does not comply, the Central Valley Flood Protection Board may remove the encroachment(s) at the permittee's expense.

FORTY-EIGHT: If the project, or any portion thereof, is to be abandoned in the future, the permittee or successor shall abandon the project under direction of the Central Valley Flood Protection Board and Department of Water Resources, at the permittee's or successor's cost and expense.

FORTY-NINE: The permittee shall comply with all conditions set forth in the letter from the Department of the Army dated July XX, 2010, which is attached to this permit as Exhibit A and is incorporated by reference.

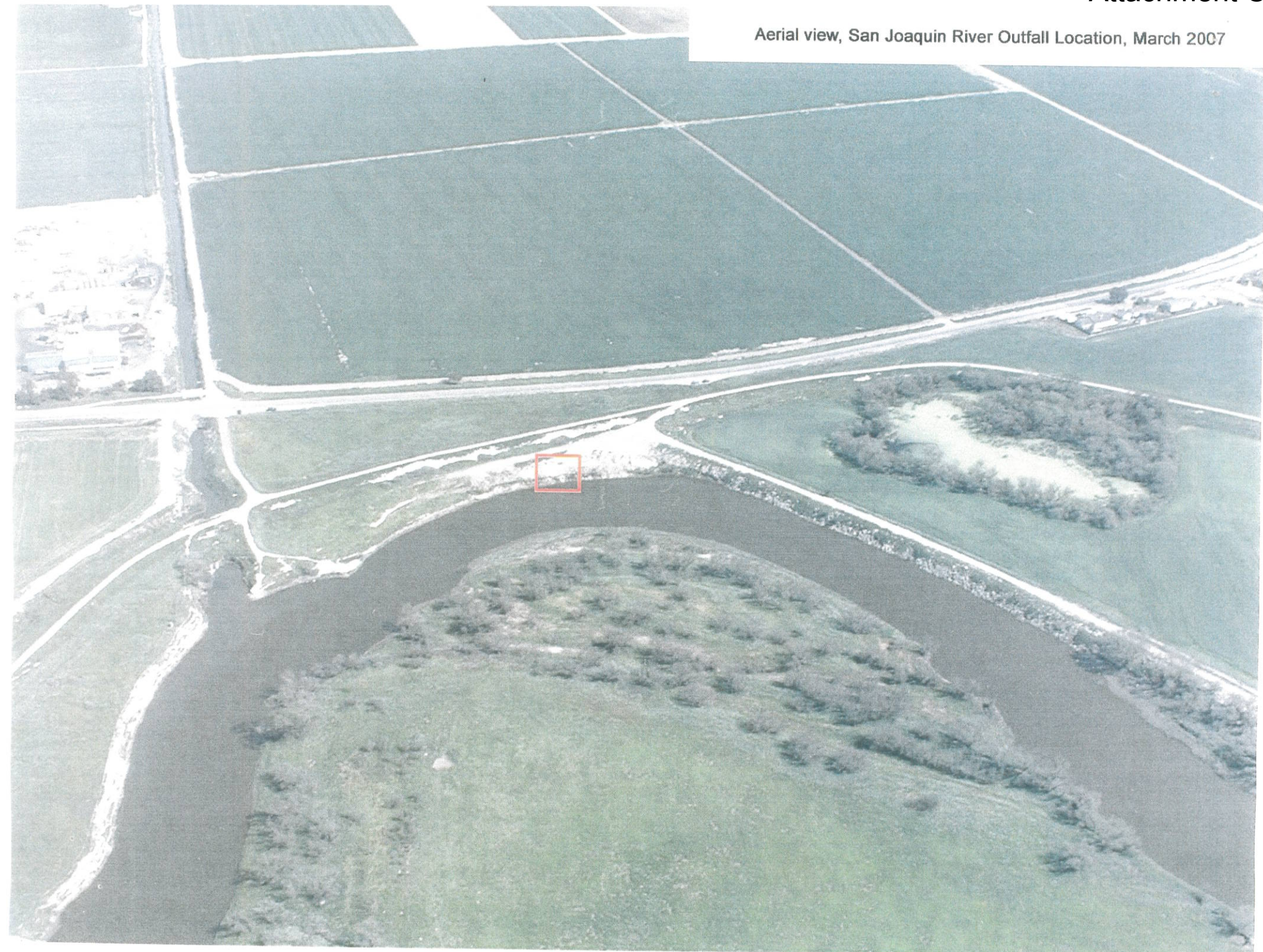
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Aerial view, San Joaquin River Outfall Location, March 2007







**Photo 9: Looking south toward east bank of San Joaquin River where outfall will be located**



**Photo 10: Looking west across San Joaquin River from outfall location**

## Proposed CEQA Findings

Board staff has prepared the following CEQA Findings:

The Board, acting as a responsible agency under CEQA, has independently reviewed the Draft Environmental Impact Report (DEIR, July 2004), Final Environmental Impact Report (FEIR, April 2005), and City of Turlock Resolution 2005-097 (which includes a Statement of Facts, Findings, and Mitigation Measures, and Mitigation Monitoring Program) for the Harding Drain Bypass Project (SCH No. 2003062002) prepared by the lead agency, the City of Turlock. These documents, including project design, may be viewed or downloaded from the Central Valley Flood Protection Board website at <http://www.cvfpb.ca.gov/meetings/2010/7-22-23-2010agenda.cfm> under a link for this agenda item.

### **Impacts that can be Mitigated**

The following are the significant impacts and the mitigation measures to reduce them to less than significant:

- **Biological Resources:** Prior to construction, conduct a biological resources education program for construction crews and enforce construction restrictions. Conduct preconstruction surveys for giant garter snake, Swainson's hawk, Western burrowing owl, ferruginous hawk, white-tailed kite, northwestern and southwestern pond turtles, and San Joaquin whipsnake. Fill of wetland areas will be minimized wherever possible. Temporary construction fencing will be erected around the Project site to reduce the potential of incidental fill. Following pipeline construction, wetland/stream crossings shall be restored to pre-construction contours. Areas exposed due to construction shall be re-vegetated using a mix of native vegetation.
- **Cultural Resources:** Work shall be stopped in affected areas if cultural resources are discovered during project construction and appropriate measures will be implemented. The lead agency will consult with a qualified archaeologist or paleontologist to assess the significance of the find. If any find is determined to be significant, representatives of the project proponent and/or lead agency and the qualified archaeologist and/or paleontologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards and CEQA Guidelines, Section 15064.5.
- **Hydrology and Water Quality:** Implement construction-related and permanent post-construction Best Management Practices. Additionally, to minimize the exposure of sediments to runoff, the City would implement measures contained in the Construction Contractor's Guide and Specification of the Caltrans Storm Water Quality Handbook (The Handbook; April 1997) and the SWRCB Water Quality Order 99-08-DWQ, NPDES, General Permit for Stormwater Discharge Associated with

Construction Activity. The project proponent shall also include provisions for monitoring during and after construction activities to verify that these standards are met.

- **Land Use and Agriculture:** The project proponent shall require its construction contractor to provide a minimum 2-week advance notice of the construction activities schedule to the affected community members adjacent to construction areas (e.g., residences, property owners, business owners, and public facility operators), including the posting of signs, as well as providing a community outreach contact for project related questions and concerns.
- **Public Services and Utilities:** The project proponent shall require its construction contractor to provide a minimum 2-week advance notice of the construction activities schedule to the affected community members adjacent to construction areas (e.g., residences, property owners, business owners, and public facility operators), including the posting of signs, as well as providing a community outreach contact for project related questions and concerns. Additionally, the project proponent shall provide a copy of the Traffic Control Plan to the Sheriff's Department, County Fire Department, and any private ambulance service providers for informational and coordination purposes prior to construction. The City's construction contractor(s) shall provide 72-hour notice to the local service providers prior to construction of individual pipeline segments. Public utilities affected by the project will be identified by the project proponent and while temporary disruption of service may be necessary to allow for construction, no service on such lines would be disrupted until prior approval is received from the construction manager and the service provider.
- **Noise:** Construction shall be scheduled between 7:00 a.m. to 7:00 p.m., Monday to Friday, or other hours and days as established by the County in applicable encroachment permits. If construction outside those exempt time periods is proposed, the City shall obtain a variance from the County. Staging areas will be set as far as feasibly possible from existing residences. Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturers' specifications) and by shrouding or shielding impact tools. All equipment shall have sound control devices no less effective than those provided by the manufacturer.
- **Transportation and Traffic:** Prior to the onset of construction of the project, a Traffic Control Plan will be prepared for all project-affected roadways and intersections. The Traffic Control Plan shall comply with requirements in all relevant encroachment permits issued by Stanislaus County. The project proponent shall expedite construction by using multiple work crews so that disturbances are kept as short in duration as possible, as well as arrange for a 24-hour telephone hotline to address public questions and complaints during project construction, and to offer information about detours. Prior to construction, the City, a County representative, and the City's construction contractor will be responsible for assessing current road



conditions for all project routes once final design plans are complete in efforts to develop post-construction road restoration requirements.

- **Hazards and Hazardous Materials:** If contaminated soil and/or groundwater or suspected contamination were encountered during project construction, work shall be halted in the area, and the type and extent of the contamination shall be identified. A contingency plan to dispose of any contaminated soil or groundwater should be developed through consultation with the appropriate regulatory agencies. The City shall ensure, through the enforcement of contractual obligations, that all contractors transport, store and handle construction-related hazardous materials in a manner consistent with relevant regulations and guidelines

Based on its independent review of the DEIR, FEIR, and the City of Turlock Resolution 2005-097, the Board finds that for each of the significant impacts described above, changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the FEIR. Moreover, such changes or alterations are within the responsibility and jurisdiction of another public agency, the City of Turlock, and such changes have been adopted by that agency.

The documents and other materials which constitute the record of the Central Valley Flood Board's proceedings in this matter are in the custody of Jay Punia, Executive Officer, Central Valley Flood Protection Board, 3310 El Camino Ave., Rm. 151, Sacramento, California 95821.